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Device Visual Check before Displaying Content

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ABSTRACT

The display device with a built-in camera is used to verify that a viewer is not recording the content being displayed on the display device with a camcorder. Before and during the playback of content, the display will scan the room and use object recognition and artificial intelligence to identify whether or not a camcorder is pointed towards it. There is a problem in the content distribution and Digital Rights Management (DRM) industry that has been intractable. A user can point a camcorder toward a high resolution display, e.g. TV, and record premium content being distributed to the home market. The copy would be then free of restrictions. This is the same problem as when a person goes into a movie theater and makes a surreptitious copy of a first-run movie. The at-home problem is more problematic however, since someone can set-up perfect lighting and recording conditions at home to make a near-flawless copy.

Unlike the watermark detection method known to the industry, the player that plays recorded or streaming content does not have to do anything. Our invention is on the display side. The display has to determine that it is safe to display.

BACKGROUND

.Prior innovations directed at similar problems have leveraged the technology of watermarking. The industry has attempted to watermark content in such a way that it can survive copying by a camcorder. And then on playback, the player is supposed to look for a watermark and then stop playback if it detects watermarks such as "copy never". The content industry never agreed on a common watermark standard and they were not able to get players to implement the detection mechanism.

DESCRIPTION

The user of a camcorder points the camcorder at the display, exposing an image sensor to the display. The display device has a built-in camera. The camera is used to verify that a viewer is not recording the content being displayed on the display device with a camcorder. Before and during the playback of content, the display scans a room and uses object recognition and artificial intelligence to identify whether or not a camcorder is pointed towards it. The display uses the output of the silicon or gallium arsenide sensor to distinguish the input light signature. In another enablement, the display is able to send infrared light to the camcorder to evoke an aperture adjustment, where the movement of the aperture is detectable by the display. The detection can be useful in settings like concerts where recordings might not be allowed.